

APPENDIX A
COMMENT DOCUMENTS AND RESPONSES

Appendix A

Comment Documents and Responses

This appendix accompanies the Responsiveness Summary, which is Part III, Sections 12 and 13, of the Record of Decision Amendment (ROD Amendment) for Operable Unit 1-07B of Waste Area Group (WAG) 1, Test Area North (TAN), at the Idaho National Engineering and Environmental Laboratory (INEEL). It contains the scanned images of all written comments received before the close of the comment periods on the proposed plan and transcripts of oral comments made during the formal comment session of each public meeting.

The questions or issues that were identified in each comment that was submitted have been outlined on the scanned image with boxes. To the right a response to each of these identified comments has been provided. At the beginning of each comment, a letter and number code identifies the document number and comment number within it. Each document number begins with a W or a T, identifying it as a written comment received from the proposed plan (W) or an oral comment made during the formal comment period of a public meeting (T). The number following the letter W or T was assigned to each separately received document according to the order in which it was received. The topic number or numbers listed after the code denote the response within the Responsiveness Summary that addresses the comment.

Where space permits, responses are adjacent to the comment they address. In cases where many comments were identified on a single page, the responses may continue onto subsequent pages. Comments that were grouped under the same topic code for the Responsiveness Summary may not have identical responses, depending on which portion of the response is germane to a particular comment.

This Responsiveness Summary identified and responded to approximately 40 statements of preferences and concerns, comments, and questions received in 12 pages of written comments from seven individuals and interested groups, and as 3 formal statements at two public meetings. Tables A-1 and A-2 summarize the numbers of comments received on the various topics of concern defined in the Responsiveness Summary, and list the individuals and groups who submitted comments in writing or presented them orally at a public meeting.

Table A-1. Index of public comments and responses by topic of concern.

Comment Category ¹	Topic	Topic Numbers	Documents Containing Comments on Topic	Number of Commenters ² on Topic	Number of Comments on Topic
13.1	Overall Goals of the INEEL Environmental Restoration Program	1	W7	1	2
13.2	Public Participation and Community Relations	2-3	W7, T2	2	3
13.3	Content and Organization of the Proposed Plan	4-6	T3, W3, W5, W7	4	10
13.4	OU 1-07B Remediation Planning and Costs	7	W5	1	1
13.5	Risk Assessment	8-11	W5, T2	2	8
13.6	Remedial Action Objectives and Compliance with ARARs	12-14	W5	1	3
13.7	Development of Alternatives	15	T1	1	1
13.8	Implementation of Alternatives	16-23	W2, W3, W5, W7	4	11
13.9	Evaluation of Alternatives	24-28	W1, W3, W4, W5, W6, W7, T3	7	12

1. Comment category and topic numbers are those used in the Responsiveness Summary, Part III of this ROD Amendment.

2. The number of commenters is an estimate of separate individuals or organizations submitting comments one or more times on the OU 1-07B Proposed Plan.

Table A-2. Index of public comments and responses by commenter.

Name of Commenter	Organization or Affiliation (as shown or stated in comments)	City (and State, if not Idaho)	Number of Pages Submitted	Document Number Assigned	Number of Comments Identified	Number of Topics of Concern	Appendix Page Numbers
Charles M. Rice		Idaho Falls	1	W1	2	2	A-5
Bruce L. Schmalz		Idaho Falls	1	W2	1	1	A-6
Rodger F. Colgan		Orofino	2	W3	4	4	A-7 to A-8
William J. Quapp		Idaho Falls	1	W4	1	1	A-9
Christina Jackson		unknown	4	W5	18	18	A-10 to A-16
Lowell A. Jobe	Coalition 21	Idaho Falls	1	W6	1	1	A-17
Stanley Hobson, Chair	Citizens Advisory Board	Idaho Falls	2	W7	6	6	A-18 to A-21
Larry Hull		Idaho Falls	1	T1	1	1	A-22
George Freund		Idaho Falls	2	T2	3	3	A-23 to A-24
Dave McCoy		Idaho Falls	2	T3	2	2	A-25 to A-26

Commenter: Chuck Rice
Page: 1 of 1
Document Number: W1

What's Your Opinion?
The Agencies want to hear from you to decide what actions to take at the TSF injection well site.*

Please return this form by December 26, 2000

Comments Katie

I strongly support the proposed new remedy in all three zones; distal, medial and hot spot.

It is very encouraging to see the triumph of science and logic over the antiquated pump and treat approach. It is quite likely that the total cost savings will turn out to be far greater than the \$7M indicated.

Congratulations

Chuck

* If you want a copy of the Record of Decision and Responsiveness Summary, make sure your mailing label is correct.

Comment W1-1 / Topics 1 and 27

Response: The preferred alternative will effectively protect human health and the environment from the risks posed by TCE and the other contaminants of concern. In addition, the alternative has very high cost-effectiveness.

Comment W1-2 / Topic 27

Response: In developing alternatives, CERCLA guidance (EPA 1999c) expresses a preference for the development of innovative treatment technologies if they offer the potential for superior treatment performance or implementability, fewer adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.

A-5

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RICE INC.
CHARLES N RICE
3505 SUN CIR
IDAHO FALLS ID 83404-7257



Commenter: Bruce Schmalz

Page: 1 of 1

Document Number: W2

What's Your Opinion?

The Agencies want to hear from you to decide what actions to take at the TCE injection well site.

Please return this form by December 26, 2000

Comments If it is assumed that TCE is immiscible in water might it ultimately revert to a gaseous phase?

Some 30 years ago I was involved with studies investigating the movement of gas through porous regolith and basalt at the TAN vicinity.*

If the above assumptions regard TCE are correct; I wonder if the the early work referred to would have relevancy to support the proposition that the contaminate plume would be attenuated or stabilized by natural processes during the time frames of 27 or 95 years?

*ID0-12024-1995

ID0-12069-1969

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W2-1 / Topic 16

Response: Only a very small quantity of TCE will revert to vapor or gas, and it will only come from the very thin layer of TCE at the top of the water table. Therefore, very little gaseous phase TCE would be available to rise into the overlying basalt. Vaporization would not be sufficient to attenuate the entire contaminant plume in the specified timeframe. Attenuation will occur through natural degradation of the TCE in the aquifer. Under the selected remedy, the contaminant plume is expected to increase slowly in size until about 2027. At that point, removal of TCE through the three components of the remedy will overtake the plume growth, and the size of the plume will be steadily reduced through the remainder of the remediation time frame (by or before 2095). Results of the studies that determined the effectiveness of the natural attenuation approach were published in 2000 in "An Evaluation of Aerobic Trichloroethene Attenuation Using First-Order Rate Estimation," by Kent S. Sorenson, Jr., Lance N. Peterson, Robert E. Hinchee, and Roger L. Ely, in *Bioremediation Journal* (a copy of the article is available from the INEEL Community Relations Office).

A-6

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BRUCE L SCHMALZ
6445 E SIDENHILL LN
IDAHO FALLS ID 83401-5939

Commenter: Rodger F. Colgan

Page: 1 of 2

Document Number: W3

Please return this form by December 26, 2000

What's Your Opinion?
The Agencies want to hear from you to decide what actions to take at the TSF injection well site.*

Comments IN A CURSORY REVIEW OF THE DRAFT/FINAL PROPOSED PLAN FOR OPERATE UNIT 1-07B, I HAVE A FEW COMMENTS.

FIRST, I PRESUME THE CONTAMINANT DISPOSAL OF RADIONUCLIDES AND VOC'S WAS AT LOW FLOW RATES (OR BATCHED QUANTITIES) DILUTED WITH INJECTION FLUIDS (WATER?). THE INFLOW RATES AND CONCENTRATIONS ARE UNDEFINED IN THE DOCUMENT AND THIS MAY HAVE AFFECTED THE UNDERGROUND DISTRIBUTION PLUME AS THERE WAS NO VERTICAL SECTION OF THE PLUME CONCENTRATION DISTRIBUTION AVAILABLE IN THE PAMPHLET. I AM UNABLE TO ADDRESS A CONCERN ABOUT THE REMEDIAL PROCEDURE. I PRESUME THE INJECTION WELL HAS A SINGLE PORT AT THE -310 FOOT LEVEL VS A DIFFUSED DISTRIBUTOR FROM THE -200 FOOT LEVEL. THE ADDITION OF "AMENDMENTS" FOR IN SITU BIOREMEDIATION MAY NEED ENHANCEMENTS OF VARIABLE FLOW ADDITION OF ALTERNATE NUTRIENT

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Comment continued on next page

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RODGER F. COLGAN
2410 HARMONY HIGHTS
GROFENO ID 83644

W3-1 / Topic 4

Response: The proposed plan is a summary only, containing information required for the public to review the alternatives and preferences under consideration. It supplements and is based on the comprehensive 1994 Remedial Investigation and Feasibility Study (RI/FS) (EG&G 1994 [EGG-ER-10643]) and the Field Demonstration Report (DOE-ID 2000 [DOE/ID-10718]).

The complete details of the OU 1-07B investigation, including well construction details, can be found in the 1994 RI/FS, the Field Demonstration Report, and other OU 1-07B documents in the Administrative Record (see Section 2.5 in this ROD Amendment for a complete list of key documents).

W3-2 / Topic 17

Response: Yes. The structure of the injection well was considered specifically during selection of the remedy. The injection well flow-rates are not known with accuracy due to the lack of historical records. The injection well was completed to a depth of 310 feet with screens in two locations: from 180 to 244 feet, and 269 to 305 feet. This allowed material injected into the well to migrate into the aquifer in two separate zones. Within 50 feet of leaving the well, contaminants migrated to a depth of 400 feet where further downward migration is stopped by an impermeable interbed. During the evaluation of in situ bioremediation, the effect of amendments was monitored to demonstrate that the amendments and the sustained bacterial growth was sufficient to degrade contaminants in the deeper level (down to 400 feet) as well as in the vicinity of the injection well screens (from 180 to 305 feet below land surface). As a result of the in situ bioremediation field demonstration, TCE concentrations are not detectable in groundwater drawn from the injection well or from just above the impermeable interbed (about 400 feet below surface) in Well TAN-26, which is about 50 feet from the hot spot.

The in situ bioremediation technology allows the amendments to be injected at variable concentrations and at variable flow rates as well as at additional wells near the injection well. During the design phase of this remedial action, the best injection strategy will be determined.

Commenter: Rodger F. Colgan (continued)
Page: 2 of 2
Document Number: W3

Comment continued from previous page

Comments (continued) BIOEEDING TO SUSTAIN THE BACTERIA @ AT HIGHER LEVELS
FOR INCREASED EFFICIENCY. THE DOCUMENT SHOULD REFLECT VARIABILITY DURING
THE LONG TERM PROCESS.

SECOND, BECAUSE OF LONG TERM CONCERNS ABOUT THE DEFINITION OF THE
UNDERGROUND PLUME, UNDER ENGINEERING CONTROLS THERE SHOULD BE
PERMANENT MARKERS INSTALLED ON THE LAND SURFACE TO ALERT
FUTURE USES OF THIS AREA. THE PERMANENT MARKERS SHOULD INDICATE
WHAT IS THE CONCERN AND WHERE TO OBTAIN NECESSARY INFORMATION
CONVENTIONAL SIGNS AND POSTINGS ARE INADEQUATE FOR THE LONG TERM

I SUPPORT THE PREFERRED ALTERNATIVE

R. F. Colgan

Fold Here. Please Use Only Clear Tape to Seal.



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PO BOX 1625
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W3-2 / Topic 17 (comment continued).

W3-3 / Topic 20

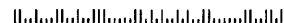
Response: The remedial action will restore the entire contaminant plume; thus, permanent markers will not be needed. Signs and postings are one form of institutional controls. Institutional controls include legal access restrictions (such as deed restrictions) and physical access restrictions (such as fencing, signs, and security measures). Institutional controls are used at sites where a cleanup action is not yet completed or cannot be performed, or at any site where the remedial measure leaves contamination in place at levels that could potentially pose a risk to human health or the environment. The effectiveness of the institutional controls will be evaluated as part of the standard CERCLA 5-year review process. These reviews will be conducted by the Agencies no less frequently than every 5 years.

The approach for establishing, implementing, enforcing, and monitoring institutional controls at the INEEL, including WAG 1, is spelled out in Section 8.1.3 of this ROD Amendment.

W3-4 / Topic 27

Response: The preferred alternative will effectively protect human health and the environment from the risks posed by TCE and the other contaminants of concern. In addition, the alternative has very high cost-effectiveness. In developing alternatives, CERCLA guidance (EPA 1999c) expresses a preference for the development of innovative treatment technologies if they offer the potential for superior treatment performance or implementability, fewer adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.

A-8



Commenter: William J. Quapp
Page: 1 of 1
Document Number: W4

What's Your Opinion?
The Agencies want to hear from you to decide what actions to take at the TCE injection well site.

Comments I SUPPORT THE PROPOSED PLAN
FOR OPERABLE UNIT 1-07B

WJ Quapp
12/6/2000

Please return this form by December 26, 2000

* If you want a copy of the Record of Decision and Responsiveness Summary, make sure your mailing label is correct.

W4-1 / Topic 27

Response: The preferred alternative will effectively protect human health and the environment from the risks posed by TCE and the other contaminants of concern. In addition, the alternative has very high cost-effectiveness. In developing alternatives, CERCLA guidance (EPA 1999c) expresses a preference for the development of innovative treatment technologies if they offer the potential for superior treatment performance or implementability, fewer adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.

A-9

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WILLIAM J QUAPP
860 W RIVERVIEW DR
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Commenter: Christina Jackson

Page: 1 of 4

Document Number: W5

January 21, 2001

Ms. Kathleen Hain
Environmental Restoration Office
DOE Idaho Operations Office MS 3911
PO Box 1625
Idaho Falls, ID 83403-9987

RE: Comments on the INEEL Operable Unit 1-07B Proposed Plan

Dear Ms Hain:

Once again the attempt of the FFA/CO agencies at honesty with the public, as demonstrated in the Proposed Plan for amendment of the OU1-07B ROD, is merely a chimera for errors, misstatements, and outright lies. I suppose the agencies attempt to foist such drivel is because most of the public either fails to understand what is being proposed, or has tired of tilting at the FFA/CO windmill. My specific comments follow.

Page 2 of the Proposed Plan states that an estimated 35,000 gallons of TCE were disposed to the TSF injection well. The 1-07B final ROD gives an estimated range of 350-25,000 gallons. How did the agencies determine the previous estimate was low? What new data has been produced that raises the estimate by approximately 50%? I had little faith in the original estimate due to the paucity of accurate records. I have less faith in this estimate. I urge the agencies to at least be consistent in the lies presented to the public.

Table 1 on Page 7 has several errors which lead an observer to believe the agencies will not fully remediate the aquifer.

The table erroneously leads a reader to believe that drinking water can simultaneously contain 20,000 pCi/l of tritium, 8 pCi/l of strontium-90 and 119 pCi/l of cesium-137 and remain in compliance with drinking water standards. This is not true based on 40 CFR 141.16. This federal regulations, properly adopted by the state of Idaho, clearly identifies the MCL for man-made beta and gamma emitters. It is 4 mrad/yr from ALL man-made beta and gamma emitters. The regulation states that 20,000 pCi/l of tritium is assumed to result in that dose. Eight pCi/l of strontium-90 is also assumed to result in a dose of 4 mrad/yr. Your calculations estimate that 119 pCi/l of cesium-137 ALSO results in a dose of 4 mrad/yr. Thus we have a total dose of 12 mrad/yr from the concentrations you present in the table. This does not meet the federal and state drinking water standards. Please identify how the actions in the Proposed Plan and ROD amendment will meet the real drinking water MCLs.

Table 1 indicates the aquifer is presently contaminated with 530-1,880 pCi/l of strontium-90. The half-life of strontium-90 is approximately 28 years. One hundred years of institutional control will allow approximately four half-lives to pass. Using the lower number of 580 pCi/l, four half-lives of decay results in an estimated strontium-90 concentration of 75 pCi/l remaining, far above the allowed 8 pCi/l. The Proposed Plan and ROD fail to mention this small fact to the public. The same calculation can be

Comment continued on next page

W5-1 / Topics 4, 5 and 6

Response: The EPA's CERCLA guidance intends the proposed plan to be a "brief summary description." Thus, all details of an investigation cannot be included. However, the Agencies make every effort to clearly and completely identify all issues that may be of concern to the public.

W5-2 / Topic 8

Response: The historical records available provide little definitive information on the types and volumes of organic wastes disposed of into the injection well over the 20 years of its use. The original 1995 ROD (DOE-ID 1995 [DOE/ID-10139]) estimate of 350-25,000 gallons was based on limited historical data and general knowledge of activities producing this type of waste. However, the 1994 RI/FS cited an upper limit of 35,000 gallons. For the Proposed Plan and the ROD Amendment, the Agencies chose to use the higher estimate.

W5-3 / Topic 9

Response: The Federal drinking water standards shown in Table 1 of the Proposed Plan for each of the contaminants of concern are provided solely for comparison with the contaminant ranges found in the vicinity of the TSF-05 injection well. The risk assessment process carried out for this site used the published MCL, which the commenter also cites. The remedial action selected under this ROD Amendment will meet the MCL for radionuclides of 4 mrad/yr, cumulatively, within the 100-year remedial action time frame scheduled for this action. The remedial action objectives established for this activity will ensure that the entire contaminant plume will meet the cumulative drinking water MCLs by 2095 (see Section 5 of this ROD Amendment for RAOs).

W5-4 / Topics 7 and 10

Response: Cost-effectiveness for treatment of radionuclides at OU 1-07B is determined in accordance with CERCLA *Guidance on Preparing Superfund Decision Documents* (EPA 1999c). A remedy is considered cost-effective if its costs are proportional to its overall effectiveness (40 CFR 300.430). The original 1995 ROD (DOE-ID 1995 [DOE/ID-10139]) called for extensive studies to determine whether radionuclides could be removed from the Test Area North (TAN) groundwater brought to the surface, and if so, at what cost.

(Continued on page 14)

A-10

Commenter: Christina Jackson (continued)

Page: 2 of 4

Document Number: W5

Comment continued from previous page

performed for cesium-137 which has a half-life of about 30 years. Allowing for the same four half-lives (even though 120 years exceeds the institutional control period of 100 years), the decay of 1,600 pCi/l of cesium-137 gives an estimated future concentration of 200 pCi/l, above the estimated MCL of 119 pCi/l. This ROD fails to inform the public how radionuclides will be treated to meet MCLs. Previous documents have stated there is no "cost-effective" treatment for radionuclides. I believe this statement is suspect based on DOE's known propensity grossly inflate "cost estimates". In any case, the proposed treatment cannot result in the contaminated plume being opened for unrestricted access after the TCE is treated. Yet the Proposed Plan indicates the RAOs for the cleanup is to restore the aquifer by 2095. Please do one of two things to respond to this issue: 1) clearly state the portion of the aquifer contaminated with radionuclides will not be remediated by 2095; or 2) institute treatment for radionuclides so the RAO may be achieved. Finally, correct the Table and inform the public of the intentional misinformation given by the agencies.

Page 12 of the Proposed Plan states: "Given that radionuclides are expected to decline to acceptable concentrations within the restoration time frame, the Agencies agreed that (a) the groundwater would not initially be treated for radionuclides and (b) any radionuclides in the groundwater brought to the surface during pump-and-treat operations would be reinjected into the aquifer." The Proposed Plan offers no evidence supporting the allegation that radionuclides will decline to acceptable levels by 2095. Please provide that evidence, and don't state that they will naturally sorb onto the basalt. I don't believe you know what the absorption coefficients are. Empirically, equilibrium should have already been reached between the radionuclides in the water and those sorbed onto the basalt. Please provide evidence to support your bold prevarication, if possible.

Page 13 of the Proposed Plan states that amendments to support bioremediation may exceed MCLs for "chemical or inorganic" constituents. Please identify the difference between those two words. Is this an unclear inference that both organic ("chemical") and inorganic constituents will exceed MCLs? The public cannot adequately comment on this proposed action without a fuller appreciation for exactly what chemicals may exceed drinking water MCLs. "May" is the code word for "will". You know exactly what chemicals are in question. Please share this information with the public. I request this Proposed Plan be withdrawn and reissued with complete information so that a more informed public opinion may be sought (unless you are afraid of such informed opinion!). Please provide a complete list of chemicals that will be injected and highlight those that will exceed MCLs when injected. Please provide an estimate of the total amount of chemicals that will be injected. Please provide information on what impact these chemicals will have on the aquifer. Will a portion of the "remediated" zone exceed MCLs for amendment chemicals at the end of the remediation? How much and for how long? It is my perception the FFA/CO agencies are trying to pull a fast one here.

Page 13 of the Proposed Plan states the agencies have agreed to implement IDAPA 37.03.03.050.01 to allow injection of chemicals above the MCL. In the past, the agencies have strongly resisted clearly stating their intention to provide formal waivers and variances in the ROD language. Please do so in this case.

W5-4 / Topics 7 and 10 (comment continued).

W5-5 / Topic 10

Response: Four radionuclides were determined to be contaminants of concern in this cleanup action: tritium, strontium-90, cesium-137, and uranium-234. Tritium and uranium-234 are currently below their respective MCLs at all locations within the contaminant plume, and concentrations of these two contaminants will continue to drop through natural decay processes.

Two contaminants, strontium-90 and cesium-137, are only above their respective MCLs near the hot spot. It is known that concentrations of these two contaminants in the groundwater (the dissolved phase) are being and will continue to be reduced through radioactive decay (as measured by standard half-life calculations) and adsorption of the radionuclides to the geological matrix through which the aquifer moves. Research data and theoretical models indicate that additional

(Continued on page 14)

W5-6 / Topic 19

Response: The term "chemicals" includes inorganic as well as organic compounds. For in situ bioremediation, the Agencies expect to select sodium lactate, which is widely used in the preparation of meat and deli products. (Alternatives to sodium lactate continue to be investigated.) Trace quantities of antimony, arsenic, cadmium, chromium, lead, and selenium are present in food-grade sodium lactate at levels above MCLs. These contaminants are present in the lactate as manufacturing impurities. However, data collected during the treatability studies show that the trace contaminants disperse into the aquifer after the sodium lactate is injected. Further information about analysis of bioremediation amendments is available in *Metals Analysis of Selected OU 1-07B Groundwater Monitoring Wells* (INEEL 2000c [INEEL/EXT-2000-00821]), and other documents in the Administrative Record. The amount and timing of amendments to be injected

(Continued on page 14)

W5-7 / Topic 12

Response: No, the Agencies do not intend to pursue waivers or variances. The Agencies have agreed that amendments containing constituents above MCLs may be injected to support aquifer remediation.

Commenter: Christina Jackson (continued)

Page: 3 of 4

Document Number: W5

Page 13 of the Proposed Plan states that radionuclides will not be reinjected if above MCLs. Well, it's about time we stopped violating Idaho injection well regulations without a formal waiver or variance. Please ensure the monitoring frequency of treated water is sufficient to detect any changes in the concentration of both the TCE (and other organic chemicals) and of radionuclides. I fear the past sampling frequency of monthly has allowed violations to occur without detection. Such a lenient sampling frequency would likely not be allowed at any other facility treating RCRA hazardous waste. Please ensure the treatment process is immediately halted if an exceedance is detected for either chemicals or radionuclides in treated water.

Page 13 of the Proposed Plan states what has been alleged for nearly a decade, and what has been acknowledged for just a few years: that the TCE in the aquifer came from a RCRA listed waste source. If such water is to be reinjected into the aquifer, then the listed waste code must be removed or the injection well becomes a Class IV well which is prohibited under Idaho regulations. I strongly urge the agencies to use the ROD to clearly state that treated water is either delisted or no longer contains RCRA listed waste.

Page 13 of the Proposed Plan states: "The geochemical behavior of the radionuclides in the subsurface acts to bind them to soil and rock... This will continue to prevent them from migrating beyond the immediate vicinity of the hot spot and from being available to future drinking water users." It is agreed that some radionuclides (tritium excepted) tend to bind to basalt. But the agencies imply that scientific data is available to support this hoped-for endpoint. I doubt it is. How can a coefficient be calculated when the basalt has not been sampled for radionuclides? How can one be estimated when the agencies have no idea how many curies of each radionuclide were disposed to the well? You're trying to baffle us with B.....!

Page 14 of the Proposed Plan discusses the dechlorination of TCE and its daughter products by bacteria. Please identify the fate and transport of the chlorides liberated by this process. What is the estimated shape and concentration gradient of the chloride plume after remediation? Will some portion of it exceed secondary drinking water MCLs?

Page 16 of the Proposed Plan states that the off-gas from the pump-and-treat system would require treatment prior to release to the atmosphere when treating the distal zone. The DOE is not treating off-gas when conducting pump-and-treat on either to hot spot or the medial zone, where TCE concentrations are higher than the distal zone. Why was this lie necessary? Is it pathological with you folks? Or are you simply trying to justify the "walk-away" option of "natural attenuation"? Please address this blatant lie.

The text on Page 17 and information found in Table 4 are inconsistent. "Monitored natural attenuation does not reduce toxicity, mobility, or volume of contaminants through treatment..." Yet Table 4 shows a half-filled circle for that criteria under Monitored Natural Attenuation. This circle should be empty. Once again, the agencies are attempting to mislead the public since some reviewers will spend more time looking at pretty tables than reading the document.

W5-8 / Topic 14

Response: As stated in the Proposed Plan, water that is treated in the New Pump and Treat Facility (NPTF) and then reinjected into the aquifer will not contain contaminants at concentrations greater than the applicable MCLs. The NPTF

(Continued on page 15)

W5-9 / Topic 13

Response: Because the TCE in the contaminated groundwater is a RCRA-listed waste, all components on the influent side of the treatment system, including the air stripper equipment, have been designed to meet the secondary containment requirements of 40 Code of Federal Regulations (CFR) 264 Subpart J of RCRA.

(Continued on page 15)

W5-10 / Topic 21

Response: Scientific data available in the Administrative Record for this action, as well as peer-reviewed scientific research literature, support the conclusion that

(Continued on page 15)

W5-11 / Topic 22

Response: No, the contaminant concentrations in the plume will not exceed the secondary drinking water MCLs at the end of the restoration time period (by or

(Continued on page 15)

W5-12 / Topics 18 and 24

Response: The need for off-gas treatment (that is, treatment of the air-emission waste stream) under the pump-and-treat alternative is just one of several factors contributing to an implement-ability ranking of moderate for this alternative, as explained on page 16 of the Proposed Plan. Another implementability factor involved in this ranking is that high pumping rates would have to be maintained

(Continued on page 16)

W5-13 / Topic 25

Response: Because MNA will act to attain groundwater restoration without active treatment, its ranking as moderate in Table 4 of the Proposed Plan is not inconsistent with the text quoted. The apparent inconsistency arises because MNA

(Continued on page 16)

A-12

Commenter: Christina Jackson (continued)

Page: 4 of 4

Document Number: W5

Page 18 states that the proposed remedies will: "...restore the entire contaminant plume..." This is an incomplete and misleading statement. It may apply to solvent compounds, but clearly does not apply to radionuclides. Why are the agencies not being honest with the public? Please withdraw this Proposed Plan and reissue it with an honest, and clearly stated, evaluation of the future state of the contaminated plume at TAN.

The Hot Spot is discussed in a box on page 18. It incorrectly states that radionuclides freed from a secondary source are not expected to migrate more than several hundred feet. Is this also true of tritium, which moves with the water? I think not. Please tell the whole truth.

The Medial Zone is discussed in box on Page 18. It states that radionuclides in the Medial Zone will drop below MCLs by 2095. Why is the box describing the Hot Spot silent on the issue of future radionuclide concentration? Are the agencies trying to hide something from the public through silence?

Page 19. The preferred alternative will not comply with laws. Radionuclides in the hot spot will not be treated and will remain above MCLs for over 200 years past the 100-year treatment time frame. Please withdraw this Proposed Plan and reissue it to clearly identify the radionuclide issue to the public! The public cannot adequately comment on a Plan where facts are intentionally omitted and obfuscated.

In summary, the DOE, the EPA, and the state of Idaho have again conspired to defraud the public through a conscious failure to provide information and by invoking unproven generalities of questionable veracity. Please reconsider your actions!

In Continued Disappointment,
/signed
Christina Jackson

cc:

Ms. Jennifer Langston, The Post Register
Mr. Rocky Barker, The Idaho Statesman
Administrator, EPA Region X
Mr. Karl Dreher, Director, Department of Water Resources
Mr. Steve Allred, Director, Department of Environmental Quality
Ms. Beverly Cook, Manager DOE Idaho Operations Office

W5-14 / Topic 26

Response: No, the statement is correct and complete. Restoration of the contaminant plume will be achieved by meeting the remedial action objectives (see page 11 of the Proposed Plan and Section 5.2 of this ROD Amendment). The remedial action objectives apply to all contaminants of concern, including radionuclides. The Agencies expect that radionuclides in the groundwater

(Continued on page 16)

W5-15 / Topic 23

Response: Tritium is currently below the MCL at all locations within the contaminant plume. The commenter is correct that tritium does move with the groundwater in the aquifer. However, tritium is below MCLs, it has a relatively short half-life (12.5 years), and it will continue to degrade quickly; therefore, there is no possibility that tritium in the contaminant plume will pose a risk to human health or the environment. Tritium in the contaminant plume has migrated to near the current plume boundary (which is based on the migration of TCE). However, the tritium is not expected to migrate much further.

W5-16 / Topic 10

Response: See response to Comment W5-4, above.

W5-17 / Topics 4, 5 and 10

Response: Four radionuclides were identified as COCs and those COCs exceed EPA risk-based concentrations for groundwater ingestion. Radionuclides in most of the medial zone and in all of the distal zone are below MCLs already. Radionuclides in the hot spot are not expected to migrate more than several hundred feet. Institutional controls are already in place to protect workers at the INEEL and the environment. The institutional controls will be maintained until the plume is restored and drinking water drawn from the plume area is safe for use. For these reasons, the proposed plan was deemed to be adequate and was not withdrawn and reissued.

See also responses to Comments W5-1 and W5-4, above.

W5-18 / Topics 4 and 5

Response: See also response to W5-1, above.

A-13

(Continued from page 10)

(W5-4 / Topics 7 and 10 cont.) A radionuclide removal study was performed in 1996. The overall objective of the radionuclide removal study was to determine, for groundwater extracted for 1,3-trichloroethene (TCE) remediation, whether there was a cost-effective method to remove radionuclides so that it could meet maximum contaminant levels (MCLs) for the two radionuclides of concern, strontium-90 and cesium-137, before reinjection. Tests were performed to evaluate the effectiveness of five reverse-osmosis membranes and five ion-exchange materials. These technologies were selected as the most promising of the technologies that are currently commercially available. Although the reverse-osmosis membranes showed good separation of the radionuclides, the technology was not pursued further because of the large amount of liquid waste that would be generated.

Screening tests were performed on five ion-exchange materials. None of the five exhibited exceptional effectiveness for both strontium and cesium removal. The three most effective materials were chosen for further bench-scale testing. One showed some effectiveness for strontium-90 removal, but not for cesium-137 removal. Another had some effectiveness for cesium-137 removal, but not for strontium-90 removal. The third material was not effective and was removed from further consideration. Because of the high quantities of calcium and magnesium in the Snake River Plain Aquifer, most of the ion-exchange resin becomes loaded with calcium and magnesium instead of the desired strontium and cesium. With all three materials, the removal efficiency for cesium-137 and strontium-90 was determined to be dependent on the material's loading capacity for calcium and magnesium. The large quantity of waste that would be generated – and would require subsequent disposal as mixed low-level waste – would contain relatively large amounts of calcium and magnesium and only relatively small amounts of the radionuclides of concern.

From these studies, the Agencies' calculated that the operating cost for radionuclide removal from the contaminated groundwater using the multiple technologies that would be required for separate removal of cesium-137 and strontium-90 would be around \$4.8 million annually. This would cost more than the rest of the remediation project combined. No other commercially available technology currently exists to carry out in situ radionuclide removal from groundwater containing high concentrations of cations, such as calcium and magnesium. Therefore, the Agencies determined that radionuclide removal from groundwater brought to the surface would not be cost-effective and agreed in the *Explanation of Significant Differences* (INEEL 1997a [INEEL/EXT-97-00931]) that it would not be performed.

DOE cost estimates are calculated following specific federal guidelines. In addition, Section 3.3.8 of *CERCLA Guidance on Preparing Superfund Decision Documents* (EPA 1999c) requires that the estimated costs of remedies have an expected accuracy of -30 percent to +50 percent. This range is intentionally selected to avoid underestimates, and the consequent necessity of adjustments in funding allocations.

(Continued from page 11)

(W5-5 / Topic 10 cont.) mechanisms, such as carbonate precipitation, may also operate to reduce radionuclide concentrations and will lead to a corresponding reduction in risk to future groundwater users. The Agencies expect that concentrations of these radionuclides will be below MCLs by 2095 or earlier.

Empirical evidence from monitoring data collected for over 10 years shows that both cesium-137 and strontium-90 are very strongly adsorbed in the residual source area. Radionuclide migration during the past 40 years has been very limited. Historical monitoring data reveals that concentrations of cesium-137 drop by an order of magnitude after only 25 feet of travel from the TSF-05 Injection Well, and strontium-90 concentrations drop by two orders of magnitude within 500 feet of the hot spot.

While it is true that quasi-equilibrium was probably reached in the secondary source before the initiation of remedial activities, these activities have disrupted that equilibrium. Performance monitoring data will be collected throughout the remedial action. These data will be frequently evaluated to determine whether appropriate progress is being made toward meeting the remedial action objectives. If it becomes clear that meeting the objectives is in doubt using the proposed remedy, additional remedial actions will be taken to ensure protectiveness.

CERCLA also requires that the Agencies conduct 5-year reviews to monitor the effectiveness of the remedy. As part of those reviews, the Agencies will monitor the progress of the entire Remedial Action, including radionuclide data. The INEEL plays an active part in current global research on groundwater contamination and cleanup. OU 1-07B project staff review research reported in leading scientific journals and at international symposia as it relates to the remedial action at TAN. The Agencies have actively supported and will continue to support research on environmental remediation.

(Continued from page 11)

(W5-6 / Topic 19 cont.) will be determined during the remedial design process following signing of this ROD Amendment. The Agencies will modify the amount and timing as necessary during the remedial action to obtain the best results. By or before the end of the remedial timeframe (defined as 2095), the contaminant plume will meet all relevant MCLs.

Monitoring results verified the data obtained from tracer tests: namely, concentrations of trace metals in the groundwater have not increased due to sodium lactate injection. Nevertheless, performance monitoring of bioremediation operations will include analysis of trace metals to ensure continued sodium lactate injection does not adversely affect groundwater quality.

(Continued from page 12)

(W5-8 / Topic 14 cont.) effluent will be monitored to ensure that reinjected water meets state of Idaho underground injection control (UIC) requirements. Monitoring of groundwater extracted for aboveground treatment has shown that the concentrations of the contaminants of concern (COCs) have remained relatively constant, and the Agencies deem that the monitoring frequency has been adequate. Monitoring frequency and methodology will be specified after the signing of this ROD Amendment, during the remedial design process. Monitoring wells located upgradient of the NPTF will be monitored on a routine basis. This will ensure the Agencies identify groundwater with high concentrations of radionuclides before those radionuclides reach the NPTF. Air stripper systems are simple in design and operation, and have been used for many years in both the DOE complex and the private sector to treat water contaminated with volatile organic compounds (VOCs). As long as the air stripper is run with adequate air-flow, the organic contaminants will be removed to below the applicable maximum contaminant levels (MCLs).

The Agencies agreed that radionuclide treatment would not be included in the design for the NPTF because radionuclides are not expected to be present in groundwater routinely treated through the NPTF. Although it is not expected, in the event that radionuclides migrate to NPTF extraction wells in the future, a contingency remedy for the medial zone would be implemented. This contingency remedy would involve operation of the existing Air Stripper Treatment Unit (ASTU) to extract groundwater from an well upgradient of the NPTF, treat the contaminated water in an air stripper to remove VOCs, and reinject the treated water in an injection well located near the hot spot to facilitate sorption of radionuclides onto subsurface soil and rock. Operation of the ASTU as the medial zone contingency remedy would prevent further migration of radionuclides to NPTF extraction wells.

During implementation of the contingency remedy, the NPTF would be operated in such a way as to ensure that the concentration of radionuclides in treated effluent would be less than the applicable MCLs. If the medial zone contingency remedy were implemented, a groundwater monitoring program would be established to monitor the migration of radionuclides into the distal zone.

If in the future, cost-effective radionuclide removal technologies become available that could be used for remediation at this site, the Agencies will reassess this component of the amended remedy.

(Continued from page 12)

(W5-9 / Topic 13 cont.) After the air stripping process, the water will be determined to no-longer-contain the listed TCE waste and will be reinjected to the aquifer if it meets the remedial action objectives, remediation goals, and ARARs. The no-longer-contained-in determination is documented in the Administrative Record in correspondence among the Agencies.

(Continued from page 12)

(W5-10 / Topic 21 cont.) sorption of radionuclides has occurred and will continue to take place. The coefficient and the estimate the commenter mentions cannot be calculated from existing data, nor are they necessary to support the expectation of radionuclide sorption.

Four radionuclides were determined to be contaminants of concern in this cleanup action: tritium, strontium-90, cesium-137, and uranium-234. Of these, strontium-90 and cesium-137 are the only two above MCLs, and they are only above their respective MCLs near the hot spot. The response to Comment No. 10 in the Responsiveness Summary (Part II, Section 13) presents more information on the distribution and concentration of all four radionuclides.

Monitoring data collected for over 10 years demonstrate that very strong sorption of cesium-137 and strontium-90 in the source area (hot spot) has acted to limit their migration during the past 40 years. In addition, historical monitoring data reveals that concentrations of cesium-137 drop by an order of magnitude after only 25 feet of travel from the TSF-05 Injection Well, and strontium-90 concentrations drop by two orders of magnitude within 500 feet of the hot spot.

It is known that concentrations of these two contaminants are being and will continue to be reduced through radioactive decay (as measured by standard half-life calculations) and sorption of the radionuclides to the geological matrix through which the aquifer moves. Research data and theoretical models indicate that additional mechanisms, such as carbonate precipitation, also may be operating to reduce radionuclide concentrations. The Agencies expect that concentrations of these radionuclides in the groundwater (dissolved phase) will be below MCLs by 2095 or earlier.

(Continued from page 12)

(W5-11 / Topic 22 cont.) before 2095). Daughter products (such as vinyl chloride) may be produced as interim, ephemeral breakdown products during ISB activities; however, bioremediation will result in complete dechlorination of VOCs by 2095. Temporary daughter products produced during remediation activities will be short-lived and will not exist at the end of remediation activities. Complete dechlorination of chloroethenes in the aqueous phase in the source area will result in chloride concentrations of less than 5 milligrams per liter (mg/L). Concentrations of chloride in the contaminant plume are 80 to 100 mg/L. The changes expected are so small that they cannot be measured reliably. The remedial action objectives for this ROD Amendment ensure that drinking water standards will be met throughout the plume by or before 2095.

(Continued from page 12)

(W5-12 / Topics 18 and 24 cont.) because of the large volume of groundwater containing low concentrations of TCE in the distal zone. Short-term effectiveness also received a lower ranking for the original selected remedy in the distal zone, because the pump-and-treat operation could expose equipment operators and site personnel to contaminants when groundwater is brought to the surface. The proposed new remedy of monitored natural attenuation does not present this exposure risk. Finally, the total cost of the original selected pump-and-treat remedy is far higher than the cost of the proposed new remedy of monitored natural attenuation.

The possible need for off-gas treatment (that is, treatment of the air-emission waste stream) under the pump-and-treat alternative is just one of several factors contributing to an implementability ranking of moderate for this alternative, as explained on page 16 of the Proposed Plan. Another implementability factor involved in this ranking is that high pumping rates would have to be maintained because of the large volume of groundwater containing low concentrations of TCE in the distal zone. Short-term effectiveness also received a lower ranking for the original selected remedy in the distal zone, because the pump-and-treat operation could expose equipment operators and site personnel to contaminants when groundwater is brought to the surface. The proposed new remedy of monitored natural attenuation does not present this exposure risk. Finally, the total cost of the original selected pump-and-treat remedy is far higher than the cost of the proposed new remedy of monitored natural attenuation.

(Continued from page 12)

(W5-13 / Topic 25 cont.) is a naturally occurring process and is not, therefore, a treatment as defined by CERCLA guidance. Under certain circumstances, however, MNA can achieve the clean-up objectives as well as, or better than, an active treatment.

The EPA's CERCLA *Guidance on Preparing Superfund Decision Documents* (EPA 1999c) provides for special groundwater remedies including the use of monitored natural attenuation. According to Appendix B, Section B.4, of the Guidance: "The 'natural attenuation processes' that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or ground water."

EPA does not view MNA to be a "no action" remedy. Rather, it is considered AS a means of addressing contamination under a limited set of site circumstances where its use meets the applicable statutory and regulatory requirements. The Guidance goes on to explain that, "A remedial alternative using natural attenuation as the cleanup

(Continued at top of next column)

(Continued from bottom of previous column)

method is not the same as the 'no action alternative.' When cleanup is required, natural attenuation may be able to attain cleanup levels in a timeframe that is 'reasonable' when compared to other comparable alternatives."

The Proposed Plan is a "brief summary description" used to facility public involvement. As a summary, the Proposed Plan was not able to discuss in detail the monitored natural attenuation evaluation, but referred the reader to the Field Demonstration Report (DOE-ID 2000 [DOE-ID-10718]) and other documents in the Administrative Record in which this information was provided.

The technology evaluation conducted for monitored natural attenuation demonstrated that trichloroethene (TCE) was being degraded under natural aquifer conditions. The evidence for this is quite strong and is based on a comparison of TCE against both tritium (corrected for radioactive decay) and tetrachloroethene (PCE), two compounds that can be treated as conservative tracers. The concentration of TCE decreases relative to the two tracers. This can be used to estimate a degradation half-life of 10 to 20 years. The monitored natural attenuation remedy is designed to monitor this process as it occurs in the future. A new monitoring network has been installed to measure the performance of the natural attenuation process. The Proposed Plan is a summary document that is not intended to present the technical details of the evaluation. The details are preserved in the Administrative Record and are available for public review.

(Continued from page 13)

(W5-14 / Topic 26 cont.) (dissolved phase) will be below MCLs, thereby ensuring a drinking water supply for future consumers that meets state and federal water quality standards. The five-year review process will play an integral role in the remedial action to monitor the pace of progress toward the objectives. If it becomes clear that meeting the objectives is in doubt using the proposed remedy, additional remedial actions will be taken to ensure protectiveness.

The selected remedy utilizes technologies that are fully expected to meet the remedial action objectives within the action time frame. Many detailed analyses of fate and transport models for radionuclides in this contaminant plume have been carried out. Details and primary data are available in the multiple sources in the Administrative Record. Much of this research, which utilizes current technologies and scientific models, is also published in scientific journals and presented at international conferences on environmental remediation.

The Agencies are confident that the combination of technologies that have been selected for restoration of the contaminant plume will protect human health and the environment at lower cost, and with less waste generated, than the original remedy.



COALITION 21

Supporting Tomorrow's Technologies With Facts + Not Fears:
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JAN 26

DOE IDAHO OPERATIONS OFFICE

Kathleen E. Hain
Environmental Restoration Program
DOE Idaho Operations Office
P.O. Box 1625
Idaho Falls, ID 83403-9987

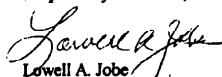
Coalition 21 Comments re "Proposed Plan for Operable Unit 1-07B"

Coalition 21 supports the Proposed Plan for Final Remedial Action at the TSF Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23). We congratulate those who have applied good science and technology in arriving at this proposed and cost-effective solution to a problem with wide future applicability to national and world wide sites.

Our conclusions are based upon reviewing available information and a presentation of data and graphs (including zonal changes of contaminants) to Coalition 21 by those involved in the project. Thus we support the proposed In-Situ Bioremediation at the Injection Well site, and Monitored Natural Attenuation for the Distal Zone.

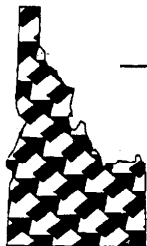
We are convinced that the proposed plan is worthy of our support and recommendation to DOE, EPA and Idaho DEQ for final implementation.

Respectfully submitted,


Lowell A. Jobe
Coalition 21

W6-1 / Topic 27

Response: The preferred alternative will effectively protect human health and the environment from the risks posed by TCE and the other contaminants of concern. In addition, the alternative has very high cost-effectiveness. In developing alternatives, CERCLA guidance (EPA 1999c) expresses a preference for the development of innovative treatment technologies if they offer the potential for superior treatment performance or implementability, fewer adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.



Citizens Advisory Board

Idaho National Engineering and Environmental Laboratory

01-CAB-005

January 25, 2001

Kathleen E. Hain
Environmental Restoration Program
DOE Idaho Operations Office MS 3911
P.O. Box 1625
Idaho Falls, ID 83403-9987

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Stanley Hobson

Vice Chair:

Jen M. Edelstein

Members:

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Kathleen Trever
Wayne Pierre
Gerald C. Bowman

Jason Staff:

Carol Cole
Amanda Jo Edelmayer
Kathy Grinstead
Wendy Green Lowe
Trina Pettigill
Teri Tyler

Dear Ms. Hain:

The Idaho National Engineering and Environmental Laboratory (INEEL) Citizens Advisory Board (CAB) has been interested in the ongoing remediation program addressing groundwater contamination at Test Area North (TAN) for many years. Although we understood that the original Record of Decision for remediation at TAN selected the best available technology, we were nonetheless concerned regarding the extremely high costs and relatively low effectiveness associated with the "pump-and-treat" strategy. We were hopeful that treatability studies would result in identification of an alternative technology that proved more effective and cost effective.

We were pleased to receive the Proposed Plan for Groundwater Remediation at TAN and to learn that recent treatability studies were successful. We appreciate DOE's willingness to extend its public comment period on the Proposed Plan to accommodate the INEEL CAB's schedule.

We submit the attached recommendation, #80, addressing our comments on the Proposed Plan. The recommendation was developed by consensus and finalized at the January 2001 meeting of the full Board.

We look forward to DOE-ID's response to INEEL CAB recommendation #80.

Sincerely,

Stanley Hobson

Chair, INEEL Citizens Advisory Board

cc: Beverly Cook, DOE-ID
Carolyn Huntoon, DOE-HQ
Martha Crosland, DOE-HQ
Fred Butterfield, DOE-HQ
Governor Dirk Kempthorne
Larry Craig, U.S. Senate
Mike Crapo, U.S. Senate
Mike Simpson, U.S. House of Representatives

Note: No comments were identified on this page.

A-18

Commenter: Citizens Advisory Board (continued)

Page: 2 of 4

Document Number: W7

Helen Chenoweth, U.S. House of Representatives

Robert Geddes, President Pro-Tem, Idaho Senate

Laird Noh, Chair, Idaho Senate Resources and Environment Committee

Bruce Newcomb, Speaker, Idaho House of Representatives

Golden C. Linford, Chair, Idaho House Resources and Conservation Committee

Jack Barracough, Chair, Idaho House Environmental Affairs Committee

Gerald Bowman, DOE-ID

Kathleen Trever, State of Idaho INEEL Oversight

Wayne Pierre, U.S. Environmental Protection Agency Region X

John Sackett, Argonne National Laboratory - West

Note: No comments were identified on this page.



Citizens Advisory Board
Idaho National Engineering and Environmental Laboratory

Proposed Plan for Remediation of Contaminated Groundwater Plume
at Test Area North

The Idaho National Engineering and Environmental Laboratory (INEEL) Citizens Advisory Board (CAB) has been interested in the ongoing remediation program addressing groundwater contamination at Test Area North (TAN) for many years. We understood that the original Record of Decision for remediation at TAN involved selection of the best available technology to reduce the risks associated with the groundwater contamination. We were nonetheless concerned regarding the extremely high costs associated with the "pump-and-treat" strategy, particularly in light of the relatively low effectiveness of that technology in reducing risks and removing contamination from the groundwater. We have been hopeful that the ongoing treatability studies would result in identification of an alternative technology that was more effective and cost effective.

Consequently, we were pleased to receive the recent Proposed Plan for Groundwater Remediation at TAN and to learn that recent treatability studies were successful. We appreciate DOE's willingness to extend its public comment period on the Proposed Plan to accommodate the INEEL CAB's schedule, and we submit this recommendation addressing our comments on the Proposed Plan.

It appears that the new remedy presented in the Proposed Plan—involving monitored natural attenuation in the distal zone, in situ bioremediation in the hot spot, and pump-and-treat in the medial zone—is both economically and environmentally preferred over current reliance solely on pump-and-treat. We applaud this successful demonstration of the value of expenditures on research and development. The INEEL CAB recommends that the process of identifying and demonstrating emerging technologies with potential merit serve as a model for future efforts. We are particularly excited that successful demonstration of in situ bioremediation may have widespread applications.

We do have some concern regarding the potential for lead contamination that could result from the lactate amendment that is currently proposed to stimulate the bioremediation. We understand that the three agencies—the Department of Energy's Idaho Operations Office, the State of Idaho, and Region X of the U.S. Environmental Protection Agency—are in agreement that it is safe to assume the amendment will pose no risk of lead contamination. The INEEL CAB recommends implementation of the preferred alternative presented in the Proposed Plan. However, we also recommend that DOE conduct ongoing monitoring of all contaminant levels to ensure that the assumption (that the lead in the lactate amendment will pose no risk) is a good assumption.

If the maximum contaminant levels (allowed under law) for any contaminant are exceeded as a result of the new remedy, then the INEEL CAB recommends:

- Immediate cessation of use of the lactate amendment until the source of the contamination can be identified and
- Immediate implementation of groundwater contamination treatment measures to reduce the concentration of contaminants before risks increase to unacceptable levels.

W7-1 / Topic 2

Response: The comment period for the Proposed Plan was extended in response to public requests for additional time to participate in the decision-making process. The Agencies recognized that the end-of-year holidays are a busy season, which may not allow people the time they would like for review and comment.

W7-2 / Topics 1 and 27

Response: The preferred alternative will effectively protect human health and the environment from the risks posed by TCE and the other contaminants of concern. In addition, the alternative has very high cost-effectiveness. In developing alternatives, CERCLA guidance (EPA 1999c) expresses a preference for the development of innovative treatment technologies if they offer the potential for superior treatment performance or implementability, fewer adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.

W7-3 / Topic 19

Response: The Agencies expect to select sodium lactate, which is widely used in the preparation of meat and deli products. (Alternatives to sodium lactate continue to be investigated.) Trace quantities of antimony, arsenic, cadmium, chromium, lead, and selenium are present in food-grade sodium lactate at levels above MCLs. These contaminants are present in the lactate as manufacturing impurities. However, data collected during the treatability studies show that the trace contaminants disperse into the aquifer after the sodium lactate is injected. Further information about analysis of bioremediation amendments is available in *Metals Analysis of Selected OU 1-07B Groundwater Monitoring Wells* (INEEL 2000c [INEEL/EXT-2000-00821]), and other documents in the Administrative Record. The term "chemicals" includes inorganic as well as organic compounds. The amount and timing of amendments to be injected will be determined during the remedial design process following signing of this ROD Amendment. The Agencies will modify the amount and timing as necessary during the remedial action to obtain the best results. By or before the end of the remedial timeframe (defined as 2095), the contaminant plume will meet all relevant MCLs.

The monitoring results verified the data obtained from tracer tests: namely, concentrations of trace metals in the groundwater have not increased due to sodium lactate injection. Nevertheless, performance monitoring of bioremediation operations will include analysis of trace metals to ensure continued sodium lactate injection does not adversely affect groundwater quality.

Commenter: Citizens Advisory Board (continued)

Page: 4 of 4

Document Number: W7

The INEEL CAB further recommends that DOE:

- Develop contingency plans for immediate implementation in the event that bioremediation results in increased concentrations of contaminants and
- Continue to search for an alternative amendment that would pose lower risks.

The INEEL CAB was favorably impressed with the well-written Proposed Plan that is well organized and nicely formatted.

The INEEL CAB was particularly pleased with the timely incorporation of an emerging technology into its cleanup program. We hope that DOE will continue to be as protective as possible by continuing to monitor emerging technologies and considering implementation of any that appear promising. We are particularly interested in emerging technologies that would reduce overall cleanup costs and/or enhance environmental protection.

W7-4 / Topic 19

Response: (See response to Comment W7-3, above)

W7-5 / Topic 5

Response: The Agencies appreciate the commenting group's compliment. Many of the improvements made in the INEEL's proposed plans have been made in response to readers' requests. The Agencies will continue to respond to specific areas of concern identified by the public in INEEL proposed plans released in the future.

W7-6 / Topic 1

Response: The Agencies are pleased that members of the public have noted and applauded the INEEL's efforts to find, develop, and implement innovative technologies for cleanup, whenever they are appropriate and cost-effective. In this, the Agencies follow CERCLA guidance (40 CFR 300.430) to ensure that innovative treatment technologies are examined if they offer the potential for equal or better performance or implementability, fewer or less adverse impacts, or lower costs in comparison to demonstrated treatment technologies.

Page 44

1 And, as I mentioned earlier, we have a
2 court reporter here tonight. So, if you make a
3 comment, please clearly speak your name, and spell
4 it if it's a difficult spelling. And give us your
5 address, as well, and then we will send you a copy
6 of the Record of Decision when that is signed.

7 I should mention that when you make your
8 comment, the Agencies will not respond unless they
9 have a question as a point of clarification.

10 So, really, the microphone is -- is
11 yours.

12 Who would like to start off?

13 Okay.

14 MR. LARRY HULL: My name's Larry Hull.

15 ~~I live at 895 Mirage Court, Idaho Falls, 83404.~~

16 And pump-and-treat has been shown over
17 the last 20 years to be a very ineffective way of
18 dealing with non-aqueous phase liquids. And I'd
19 like to commend the Agencies for being willing to
20 try something new and something that could prove to
21 be a lot cheaper and, in the long run, much more
22 effective.

23 THE FACILITATOR: Thanks.

24 George.

25 MR. GEORGE FREUND: George Freund.

T1-1 / Topic 15

Response: The Agencies are pleased that members of the public have noted the INEEL's efforts to find, develop, and implement innovative technologies for cleanup, whenever they are appropriate and cost-effective. When pump-and-treat technology was selected in the original 1995 ROD (DOE-ID 1995 [DOE/ID-10139]) for implementation at the hot spot, it was the best technology available. However, at the time the original 1995 ROD was signed, the Agencies realized that better, more cost-effective treatments might be available for the specific cleanup problems identified at TAN. Therefore, the Agencies, through the original 1995 ROD, commissioned treatability studies to identify whether better technologies existed to remediate the contaminant plume. Although better, faster, or more cost-effective technologies were identified for the hot spot and the distal zone of the contaminant plume, pump-and-treat technology continues to be identified as the preferred approach to cleanup of the medial zone of the plume.

A-22

Page 44

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2 court reporter here tonight. So, if you make a
3 comment, please clearly speak your name, and spell
4 it if it's a difficult spelling. And give us your
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23 THE FACILITATOR: Thanks.

24 George.

25 MR. GEORGE FREUND: George Freund.

Note: This page included to provide for the record the complete text of public comments made by George Freund. Mr. Freund's specific comments begin on the following page of the transcript.

Page 45

1 That's Freud with an "N" in it. F-R-E-U-N-D. Post
2 Office Box 51232, Idaho Falls.

3 I'd like to suggest that a comment
4 period that starts the day after Thanksgiving and
5 goes to the day after Christmas is not a 30-day
6 comment period. And, therefore, I'd like to
7 encourage the Agencies to extend the comment period
8 for at least 15 to 30 days beyond that.

9 The other point to make is that the --
10 there's a much more sexy topic being discussed at
11 the same time over in Jackson, where they're
12 talking about alternatives to incineration. And
13 DOE should try to schedule meetings like that at
14 different times. The environmental reporter for
15 the "Post Register" is over in Jackson instead of
16 covering this session.

17 And the other point I'd like to make is
18 that it should be pointed out that this is an
19 industrial waste problem and not a radioactivity
20 problem. It's no different than a lot of
21 industrial waste issues. So, it shouldn't be tied
22 to radioactivity.

23 THE FACILITATOR: Thanks.

24 Would you like to make a comment, sir?

25 MR. DAVE McCOY: Dave McCoy, 2940 Red

T2-1 / Topic 2

Response: The comment period for the Proposed Plan was extended in response to public requests for additional time to participate in the decision-making process. The original comment period was exactly 30 days, as is required for CERCLA actions. However, the Agencies recognized that the end-of-year holidays are a busy season, which may not allow people the time they would like for review and comment. At the same time, the Agencies did not wish to delay the project, so they chose instead to release the Proposed Plan in late November when it was ready, and extend the comment period to give everyone ample time to respond without adversely affecting the project schedule.

T2-2 / Topic 3

Response: The Agencies were aware that the first public meeting for the OU 1-07B Proposed Plan took place in Idaho Falls on the same night that a public meeting for an unrelated INEEL project took place in Jackson, Wyoming. However, a second public meeting for the Proposed Plan was held the following night in Twin Falls, approximately the same driving time from Idaho Falls as Jackson, Wyoming. Admittedly, members of the public and the media who wished to attend meetings on both projects had to attend two meetings in the same week. However, the Agencies were equally aware that with the busy holiday season coming up, the only alternative was to delay the OU 1-07B meetings and, consequently, the project. Public meetings on proposed plans are intentionally scheduled one week after the beginning of the public comment period to allow the public sufficient time following the meeting to submit their comments before the comment period ends.

T2-3 / Topic 11

Response: It is both. The contaminant of concern (COC) that poses the greatest risk to future groundwater users is TCE, which is a result of industrial activities at TAN. Therefore, for the TAN injection well, TCE is the "risk driver." However, the current risks posed by strontium-90 and cesium-137 near the hot spot also are greater than acceptable levels. Both of these radionuclides will be monitored and evaluated as part of the Agency 5-year review process.

A-24

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19 industrial waste problem and not a radioactivity

20 problem. It's no different than a lot of

21 industrial waste issues. So, it shouldn't be tied

22 to radioactivity.

23 THE FACILITATOR: Thanks.

24 Would you like to make a comment, sir?

25 MR. DAVE MCCOY: Dave McCoy, 2940 Red

Note: This page included to provide for the record the complete text of public comments made by Dave McCoy. Mr. McCoy's specific comments begin on the following page of the transcript.

1 **Barn Lane, Idaho Falls.**

2 I asked the question in the earlier
3 session about the location of the monitoring wells
4 and the provision of data, and I'd like to see that
5 information included in your proposed plan.

6 Also, I'd like to see some kind of
7 statistical data submitted which would allow a
8 person to review how your proposed objectives will
9 be met through the bioremediation plan and see the
10 -- some of the actual study data that's presented
11 on some of those charts.

12 Thank you.

13 THE FACILITATOR: Thanks.

14 Anyone else?

15 Okay. With that, I'd just like to
16 remind everyone that comments will be accepted on
17 this project until December 26, unless the comment
18 period is extended, as requested.

19 Your comments will be responded to in
20 the Responsiveness Summary Section of the Record of
21 Decision.

22 And for those who didn't want to make
23 oral comments tonight, we've got a comment form in
24 the back of the room where you can just write down
25 your comments and put that in the mail, postage

T3-1 / Topic 4

Response: The Agencies appreciate all suggestions from the public on types of information that could help a Proposed Plan better serve its purpose. The EPA's CERCLA guidelines define a proposed plan's content and purpose (see 40 CFR 300.430 and *Guidance on Preparing Superfund Decision Documents*, EPA 540-R-98-031, OSWER Directive 9200.1-23P [EPA 1999c]; the Guidance is available on-line at <http://www.epa.gov/superfund/>). The proposed plan is a summary only, containing information required for the public to review the alternatives and preferences under consideration.

For readers who seek more information on any aspect of the investigation process, the Proposed Plan provided references to documents in the Administrative Record that present in full the information cited. The complete details of the OU 1-07B investigation, including sampling data, maximum contaminant levels (MCLs), and well construction details, can be found in the 1994 RI/FS, the Field Demonstration Report, and other OU 1-07B documents in the Administrative Record (see Section 2.5 of the ROD Amendment for a complete list of key documents).

T3-2 / Topic 28

Response: The Proposed Plan is a summary only, containing information required for the public to review the alternatives and preferences under consideration. The reasons behind this format were developed by the EPA in its guidance for CERCLA documents (EPA 1999c), and are described in the responses on Topics 4 and 5 in Section 13.3 of this summary. The Proposed Plan provided references to the relevant sections of the 1994 comprehensive RI/FS (EG&G 1994 [EGG-ER-10643]) and the Field Demonstration Report (DOE-ID 2000 [DOE-ID-10718]), and other documents in the Administrative Record that present in full the information from which the Proposed Plan is derived. The complete details of the OU 1-07B investigation, including sampling data, maximum contaminant levels (MCLs), and well construction details, can be found in the RI/FS, the Field Demonstration Report, and other OU 1-07B documents in the Administrative Record.

The information the commenter requested is in the RI/FS, which is part of the Administrative Record. Instructions for accessing the Administrative Record are provided in the Proposed Plan. The public may also attend public meetings or request briefings to get more details about the alternatives and other data summarized in the Proposed Plan. Section 2.5 of the ROD Amendment has a list of key documents used in the selection of the remedy, which are all in the Administrative Record.